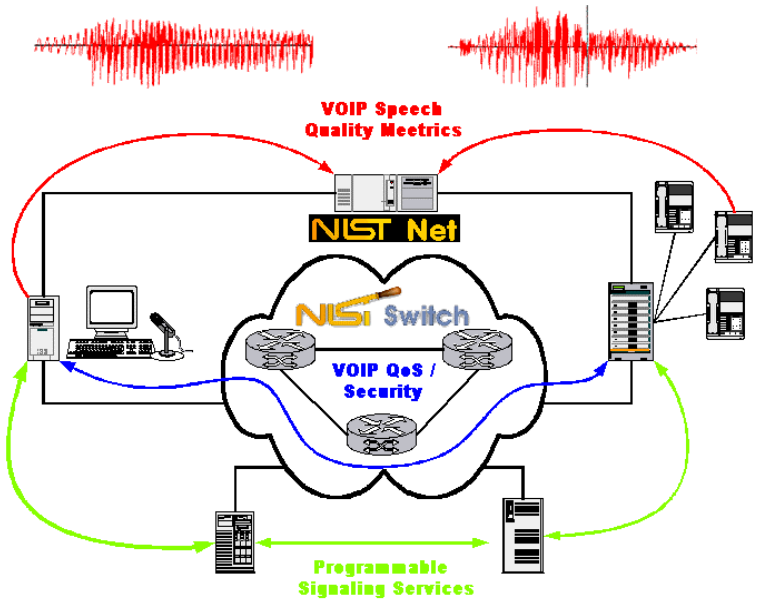
Internet Telephony / VoIP



Goal

To research and develop testing methodologies and tools that will (1) enable the measurement of voice quality for existing VoIP end-systems and networks; (2) facilitate the analysis of new VoIP coding and representation technologies and network transport services; and (3) expedite the research and development of protocols and platforms for programmable telephony services.

Technical Objectives

- Explore and evaluate objective speech quality measures, including novel continuous speech recognition (CSR) techniques.
- Develop an automated VoIP test and measurement system that is integrated with the NISTNet network emulation tool.
- Identify standardization requirements and testing needs for programmable IP telephony services.

Impact

- Deliver testing technology that makes a demonstrable impact on the VoIP research and development community.

Customers and Collaborators

Potential Customers

- Router/Switch vendors
- IP Telephone vendors
- Local/long distance carriers

Collaborators

- NTIA/ITS (Boulder)
- Quicknet, GTE, Applied Microsystems Corp (AMC)
- ITL/IAUID/Spoken Natural Language Processing Group
- NIST ATP

Planned Accomplishments (FY00-01)

- Research and evaluate of objective speech quality measures for VoIP. (FY00)
- Develop automated VoIP quality measurement tool integrated with NISTNet. (FY00)
- Prototype and evaluate SIP based programmable network technologies for IP Telephony services. (FY00)
- Develop WWW-based SIP Interoperability Test tool and multi-party test scenarios. (FY01)
- Document analysis of key standardization and testing issues in programmable Internet signaling services. (FY01)
- Research and evaluate of impact of emerging Internet QoS and security mechanisms on VoIP speech quality. (FY01)